



ARONVIT[®]
by Greenvit[®]

Metabolic support



Aronia melanocarpa (Michx.) Elliot

METABOLIC HEALTH BOOST
FAVORABLE IMPACT ON LIPID PROFILE
ANTI-INFLAMMATORY ACTIVITY



aronvit.com



ARONVIT[®]
by Greenvit[®]

What is ARONVIT[®]

ARONVIT[®] is a unique, standardized extract from selected aronia berries. As a result of our own technology development efforts we have obtained a pioneering, prime quality extract with a rich anthocyanin content. Thanks to a high content of anthocyanins, ARONVIT[®] extract shows a wide range of beneficial health results, including a number of positive metabolic changes.

Specification

Thanks to procurement sources of raw materials from local contractors GREENVIT[®] is able to fully manage product identity and quality. ARONVIT[®] has been standardized for the content of anthocyanins (HPLC) and polyphenols (UV) as well.

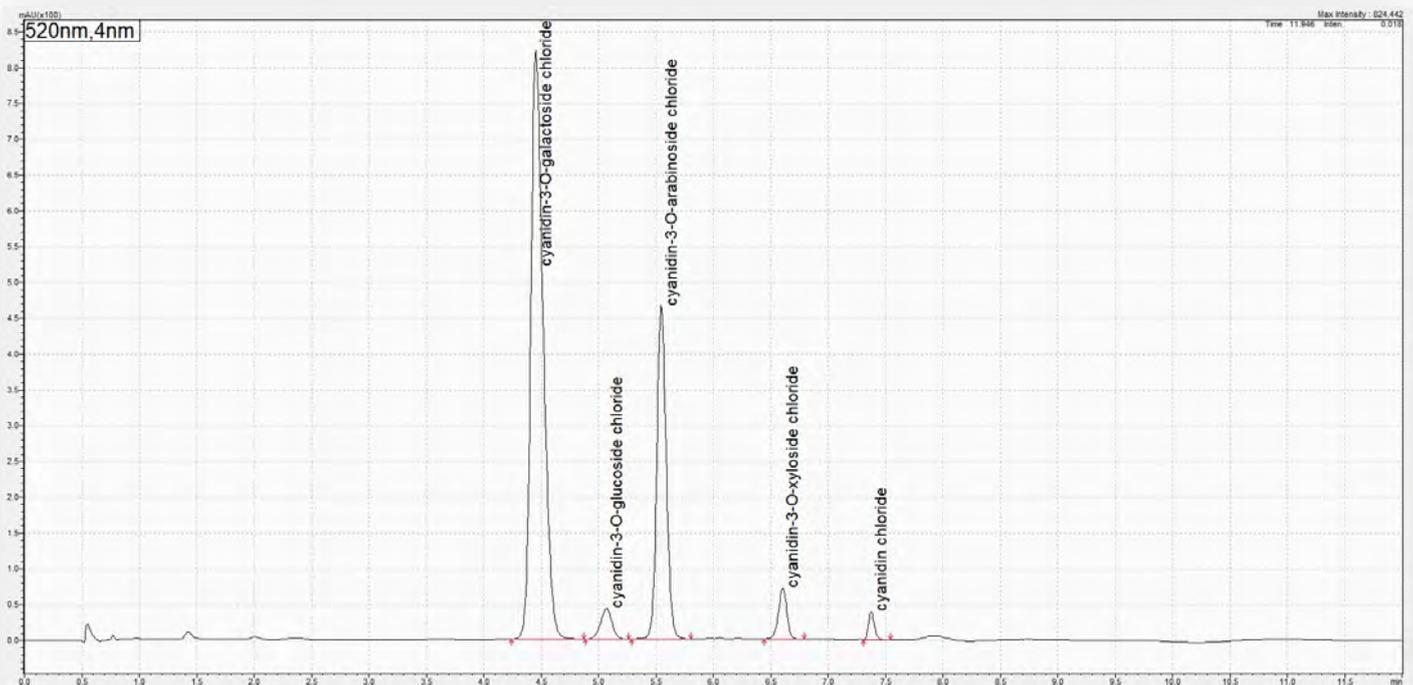


Figure 1. Anthocyanin fractions: Cy-3-gal Cy-3-ara Cy-3-xyl Cy-3-glu

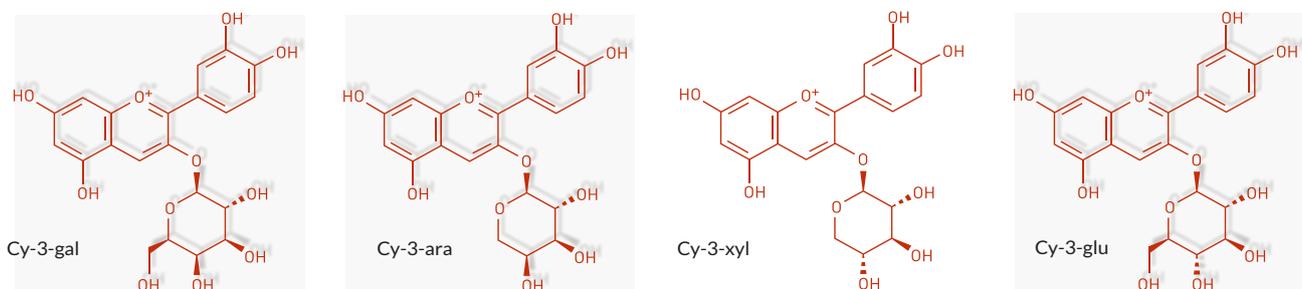


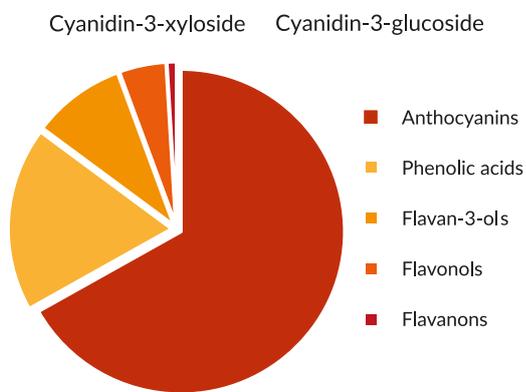
Figure 2.

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Table 1.

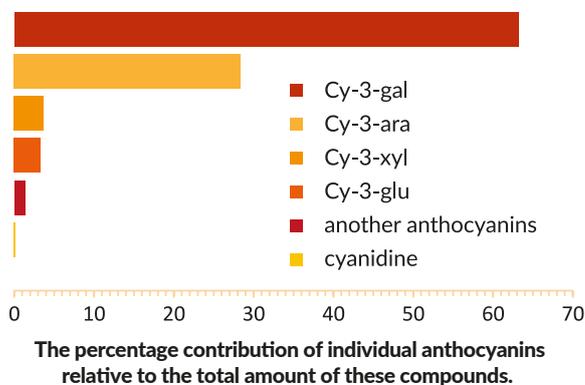
Product ARONVIT® 15% - Aronia berry dry extract Physico-chemical parameters	Method	Specification
Anthocyanins calculated as Cyanidin 3- glucoside chloride	SOP: L/I-54 (HPLC, USP)	min. 15%
Polyphenols calculated as catechin	SOP: L/I-02/01 (UV-VIS)	min. 25%
Total proanthocyanidins (PAC) %	DMAC (eq B2)	min. 10%

Figure 3.



The proportion of particular groups of active compounds in ARONVIT®, expressed as % of polyphenols determined by HPLC. The averaged results of analysis of three separate batches of the extract are presented.

Figure 4.



Structure of anthocyanins in ARONVIT®
Based on determinations carried out by HPLC. The averaged results of analysis of three separate batches of the extract are presented.

Qualitative (LC-MS) and quantitative (HPLC) analysis of six batches of ARONVIT® extract¹ showed that the polyphenols in it include compounds belonging to anthocyanins, flavonols, flavanols, flavan-3-ols and phenolic acids. The result of qualitative and quantitative identification of anthocyanins in ARONVIT® is shown in Figure 3. and Figure 4.

ARONVIT[®]

antioxidant activity - spectrophotometric analysis

The total content of phenolic compounds in 3 batches of **ARONVIT[®]** extract, determined by the method with Folin-Ciocalteu reagent in terms of gallic acid, was 63.46 g GAE/100 g extract². This naturally translated into an above-average high antioxidant activity of our extract (Table 2).

Antioxidant activity - spectrophotometric analysis ARONVIT[®] (mMol Trolox/100 g)			
Method used	DPPH	ABTS	FRAP
	336.05	394.88	352.56

Table 2.

Antioxidant activity of **ARONVIT[®]** determined by spectrophotometric methods.

Recommended use and dose

ARONVIT[®] is a dark purple to black fine powder. It can be suitably used in the form of syrup, capsule and tablets. The suggested daily dose is 50-150 mg.

Benefits of using **ARONVIT[®]** and target group

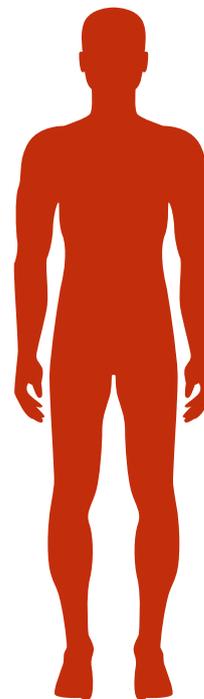
Aronia is the healthiest berry in the world, with one of the highest scores on the ORAC³ scale. In other words, as an antioxidant, it has the highest capacity of absorbing reactive oxygen species (ROS). The bioavailability of polyphenols and anthocyanins in food depends mostly on food storage conditions and techniques of meals preparation. Processing and purification of vegetal food affect adversely on the level of antioxidant substances. That's why **ARONVIT[®]** standardized extract with the high content of anthocyanins and polyphenols is a perfect choice to ensure proven, versatile health benefits⁴.

ARONVIT[®] is recommended for individuals exposed to adverse environmental factors. It provides natural support in:

- healthy metabolic function
- managing blood sugar levels in diabetes
- reducing triglyceride levels
- lowering cholesterol levels
- supporting anti-inflammatory activity⁵

Figure 5.

Anthocyanins influence on human health parameters



- ↑ antioxidant activity
- ↑ metabolic health
- ↓ triglycerides
- ↓ LDL
- ↓ oxLDL
- ↓ inflammatory process

ARONVIT® trademark

ARONVIT® registered trademark is the property of GREENVIT® company. The trademark may be used solely together with the purchased extract complex.

Impact of anthocyanins on diabetes

Anthocyanins are good for the improvement of lipid parameter, glucose levels, endothelial function and redox status in the body weight loss. In particular, anthocyanins show protection properties for the metabolic system⁶. Moreover, a diet rich in anthocyanins improves the plasma lipid profile by reducing the total cholesterol concentration, LDL fraction and triglycerides⁷. Additionally, by reducing the action of enzymes active in lipid metabolism, anthocyanins inhibit their oxidation and immunological response to LDLox and their capture by macrophages⁸. The findings from studies conducted on animal models to analyze the protective effect of anthocyanins in insulin resistance and obesity showed that anthocyanins are effective in increasing tissue responsiveness to insulin, reducing weight gain and lipid accumulation. For instance, in study (Yamane et al., 2017) demonstrated the suppression of elevation of postprandial blood glucose levels. Finally, anthocyanins help prevent the damage to blood vessels, typical in the course of diabetes, and the positive effect of anthocyanins on microcirculation translates into their positive impact on diabetic retinopathy.



Influence of anthocyanins on anti-inflammatory activity

The anti-inflammatory action of anthocyanins is manifested in the regulation of tension in capillary walls, which in turn reduces the cell inflammatory response. Anthocyanins inhibit, among all, NF-κB and the synthesis of inflammatory mediators (PGE2), and reduce the activity of COX-2. They regulate PLA2, COX-2, LOX enzymes and have the ability to regulate iNOS activity. As a part of their protective function in inflammatory processes, anthocyanins trigger the synthesis of prostacyclin (PGI2) produced in endothelial cells and foster their anti-aggregation action (like acetylsalicylic acid).

Impact of aronia on GLP-1 and metabolism

Aronia due to its content of bioactive compounds such as cyanidin-3,5-diglucoside, may positively influence GLP-1 levels by inhibiting the DPP IV enzyme. This action, along with other beneficial metabolic effects, suggests the potential use of aronia as a natural support in the treatment of type 2 diabetes and other metabolic disorders⁷.

Conclusion

The positive effects of anthocyanin intake, as described above, occur as a result of a combined action of several mechanisms. While only some of them are directly connected with the antioxidative effect, and the majority is triggered by anthocyanin indirect action.



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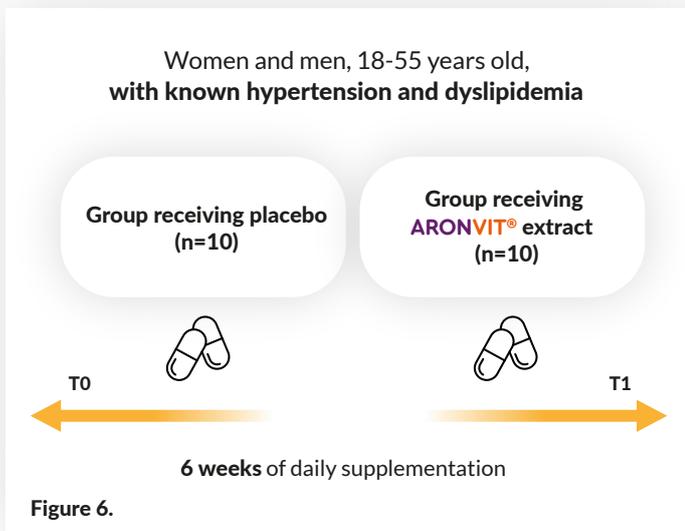
Case Studies

Comparison of the Effects of Standardized Aronia Extract on Selected Markers Related to Metabolic Disorders



Randomized, Parallel, Placebo-Controlled Trial

The aim of the study was to compare the effects of aronia berry extract (ARONVIT[®]) on selected biomarkers associated with the risk of developing various diseases.



ARONVIT[®] extract demonstrated a remarkable ability to stabilize homocysteine level

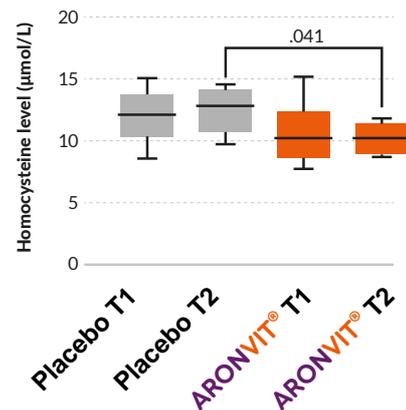


Figure 7. Changes in homocysteine levels in serum of patients using placebo and ARONVIT[®]. Results are presented as a level of homocysteine at T1 (before supplementation) and T2 (at the end of supplementation). P values were calculated with Dunn's multiple comparisons test.

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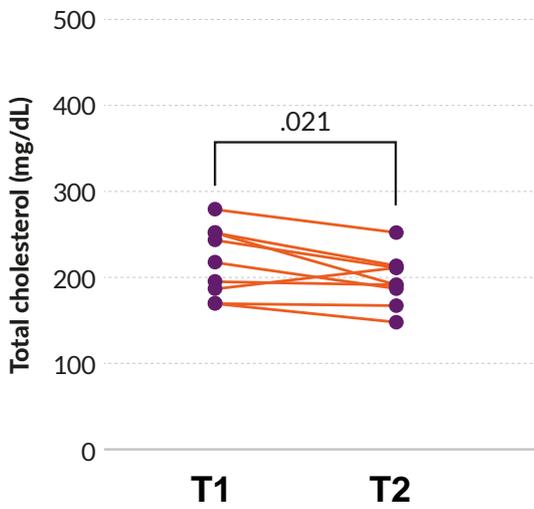


Figure 8. Changes in total cholesterol level in serum of patients using placebo and ARONVIT[®]. Results are presented as a total cholesterol level at T1 (before supplementation) and T2 (at the end of supplementation). P value was calculated with a paired t-test.

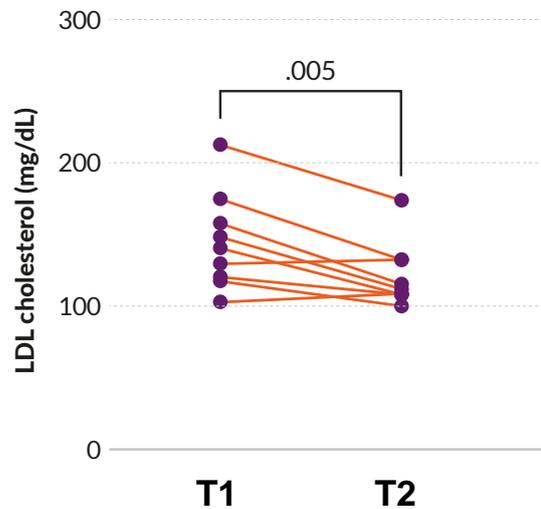


Figure 9. Changes in LDL cholesterol level in serum of patients using placebo and ARONVIT[®]. Results are presented as a LDL cholesterol level at T1 (before supplementation) and T2 (at the end of supplementation). P value was calculated with a paired t-test.

Following 6 weeks of ARONVIT[®] supplementation, patients exhibited a noteworthy reduction in **total cholesterol** levels ($p = 0.021$), but no statistically significant alterations were seen in the placebo group. In the ARONVIT[®] group, the mean decrease in total cholesterol was 21.8 mg/dL.

Patients who received ARONVIT[®] experienced a notable decrease in **LDL cholesterol** levels after 6 weeks ($p = 0.005$), but the placebo group did not show any statistically significant changes. In the ARONVIT[®] group, the mean reduction in LDL cholesterol was 22.3 mg/dL.

Changes in the lipid profile were also evident in the reduction of the **LDL/HDL** ratio in patients taking ARONVIT[®] ($p=0.013$).

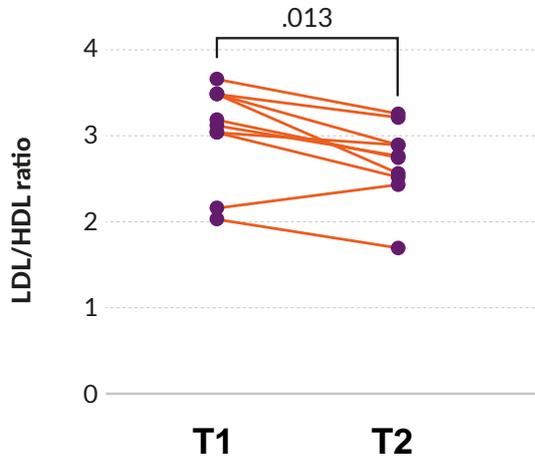


Figure 10. Changes in LDL/HDL ratio in serum of patients using placebo and **ARONVIT[®]**. Results are presented as a LDL/HDL ratio at T1 (before supplementation) and T2 (at the end of supplementation). P value was calculated with a paired t-test.

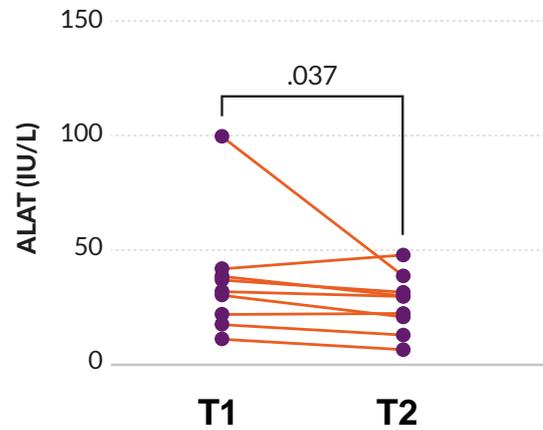


Figure 11. Changes in ALAT activity in the serum of patients using placebo and **ARONVIT[®]**. Results are presented as the activity of ALAT at T1 (before supplementation) and T2 (at the end of supplementation). P value was calculated with a paired t-test.

ARONVIT[®] has shown efficacy in enhancing lipid markers, providing a viable strategy for maintaining cardiovascular well-being. These findings underscore the potential of **ARONVIT[®]** as a beneficial adjunct in promoting overall cardiovascular health.

After 6 weeks of **ARONVIT[®]** supplementation, clinical assessment revealed a noticeable effect on the serum activity of **alanine aminotransferase (ALAT)**. The patients experienced a mean reduction of 9.7 IU/L in **ALAT** activity (P=0.037).

Atherosclerosis is closely linked to metabolic syndrome. Liver dysfunction, indicated by elevated ALAT activity, is often seen in individuals with metabolic syndrome. These individuals are at higher risk of developing atherosclerosis due to the interconnected pathways involving inflammation, lipid metabolism, and endothelial dysfunction. **ARONVIT[®]** supplementation may contribute to the management of atherosclerosis-related conditions.

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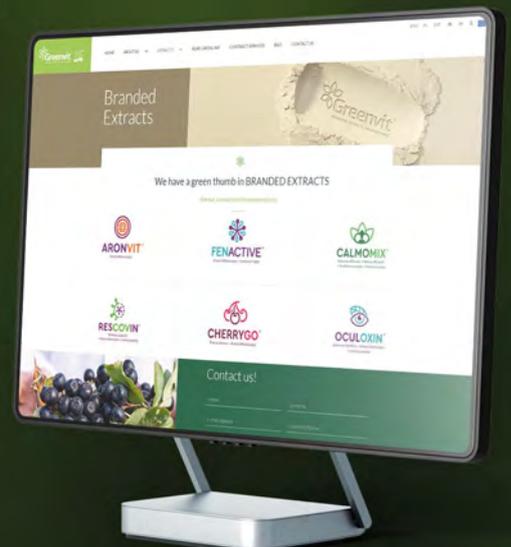
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Turn the page on innovation.
Discover extracts that go beyond expectations.





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Wellness boost



Aronia melanocarpa (Michx.) Elliot

**BALANCE, VITALITY AND CELLULITE CARE
GLOW FROM WITHIN
RADIATING HEALTH AND ENERGY**



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What is ARONVIT®

ARONVIT® is a unique, standardized extract from selected aronia berries. As a result of our own technology development efforts we have obtained a pioneering, prime quality extract with a rich anthocyanins content. Thanks to a high content of anthocyanins, ARONVIT® extract shows a wide range of beneficial health results, including a number of positive metabolic changes, as reported in literature.

includes compounds belonging to anthocyanins, flavonols, flavanols, flavan-3-ols and phenolic acids (Figure 1). The predominant group of phenolic compounds identified in our extract are anthocyanins. This is confirmed by the results of published scientific reports (Zheng et al. 2003, Jakobek et al. 2007), which also indicate the quantitative predominance of anthocyanins among the phenolic compounds identified in chokeberry berries and the preparations obtained from them. The result of qualitative and quantitative identification of anthocyanins in ARONVIT® are shown in Figure 3.

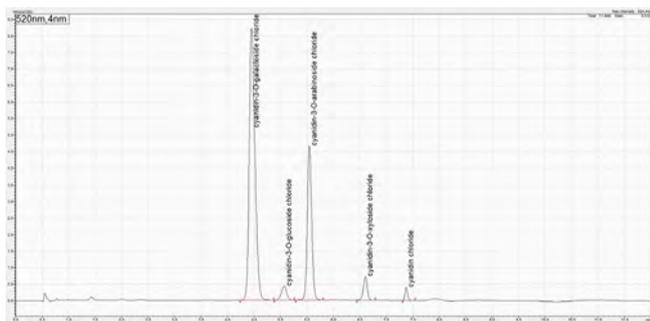


Figure 1. Anthocyanin fractions: Cy-3-gal Cy-3-ara Cy-3-xyl Cy-3-glu

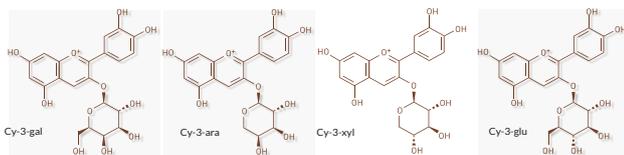
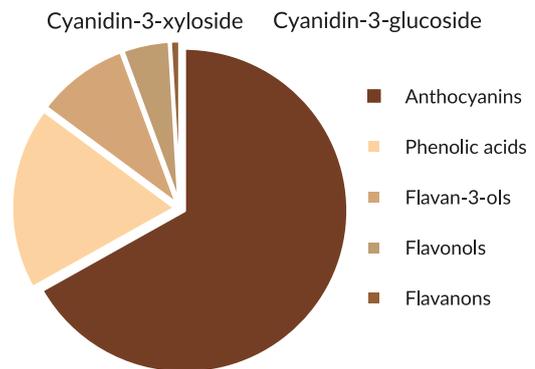


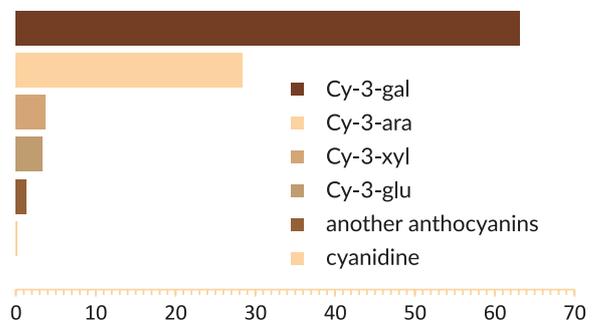
Figure 2.

Figure 3.



The proportion of particular groups of active compounds in ARONVIT®, expressed as % of polyphenols determined by HPLC. The averaged results of analysis of three separate batches of the extract are presented.

Figure 4.



The percentage contribution of individual anthocyanins relative to the total amount of these compounds.

Structure of anthocyanins in ARONVIT®
Based on determinations carried out by HPLC. The averaged results of analysis of three separate batches of the extract are presented.

Specification

Thanks to procurement sources of raw materials from local contractors GREENVIT® is able to fully manage product identity and quality. ARONVIT® has been standardized for the content of anthocyanins (HPLC) and polyphenols (UV) as well.

Qualitative (LC-MS) and quantitative (HPLC) analysis of three batches of ARONVIT® extract* showed that the polyphenols in it

Table 1.

Product ARONVIT® 15% - Aronia berry dry extract Physico-chemical parameters	Method	Specification
Anthocyanins calculated as Cyanidin 3- glucoside chloride	SOP: L/I-54 (HPLC, USP)	min. 15%
Polyphenols calculated as catechin	SOP: L/I-02/01 (UV-VIS)	min. 25%
Total proanthocyanidins (PAC) %	DMAC (eq B2)	min. 10%

ARONVIT®

antioxidant activity - spectrophotometric analysis

The total content of phenolic compounds in 3 batches of ARONVIT® extract, determined by the method with Folin-Ciocalteu reagent in terms of gallic acid, was 63.458 mg GAE/100 g extract. This naturally translated into an above-average high antioxidant activity of our extract (Table 2).

Antioxidant activity - spectrophotometric analysis ARONVIT® (mMol Trolox /100 g)			
Method used	DPPH	ABTS	FRAP
	336,05	394,88	352,56

Table 2.

Antioxidant activity of ARONVIT® determined by spectrophotometric methods.

Recommended use and dose

ARONVIT® is a dark purple to black fine powder that can be suitably used in the form of syrup, capsules, and tablets. The suggested daily dose is 50–150 mg.

ARONVIT®

intelligent Support for the Body at the Cellular Level

One of the key mechanisms of action behind ARONVIT® lies in its ability to counteract chronic, low-grade inflammation — a phenomenon known as inflammaging. This silent yet progressive process is increasingly recognized as a driving force behind accelerated aging and the development of numerous chronic diseases. Elevated levels of pro-inflammatory cytokines, such as IL-6 and TNF- α , are associated with tissue degeneration, reduced immunity, loss of energy, and persistent fatigue. Importantly, IL-6 has been directly linked to the development of chronic, difficult-to-diagnose fatigue and impaired cognitive performance. These underlying inflammatory mechanisms contribute to neurodegenerative, cardiovascular, immune-related diseases, and even premature skin aging. Against this backdrop, the potential of aronia

extracts becomes particularly compelling. Thanks to their high anthocyanin content, they have the ability to regulate inflammatory gene expression, including the inhibition of the NF- κ B pathway. Simultaneously, compounds present in ARONVIT® activate the Nrf2 pathway, which governs the expression of antioxidant defense mechanisms that protect mitochondria and support cellular integrity. This dual strategy — dampening inflammation while shielding cells from oxidative damage — translates into tangible benefits across multiple physiological systems.

For the user, this means more than just preventive support against chronic diseases. It reflects a daily enhancement of well-being, elevated energy levels, and improved cognitive performance. Scientific findings suggest that chronic inflammation disrupts neurotransmitter signaling, particularly in serotonin and dopamine pathways, contributing to low mood and reduced motivation. Regular intake of aronia polyphenols helps restore this neurochemical balance, leading to improved mental resilience and emotional well-being.

The systemic effects of ARONVIT® are noticeable across both physical and mental domains. Metabolic parameters such as blood pressure, cholesterol levels, and glycemic stability are positively influenced. The nervous system benefits from the neuroprotective properties of anthocyanins, resulting in improved memory, focus, and mental clarity. Emotional outcomes are equally significant — reduced fatigue, increased vitality, and a general uplift in mood.

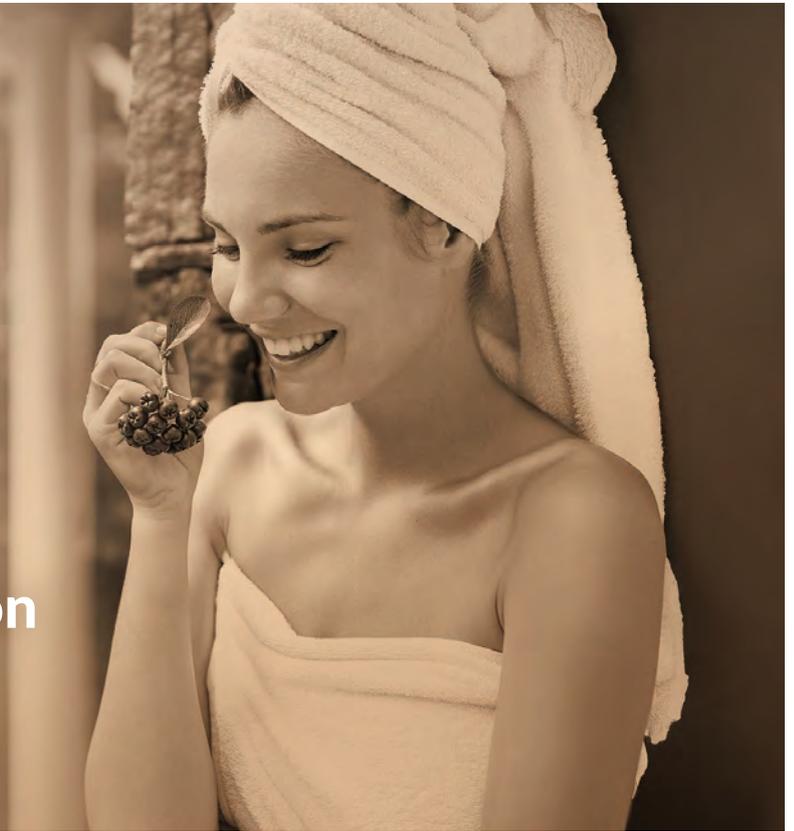
What makes aronia extracts truly stand out is the synergy of their action. These compounds not only neutralize oxidative stress but also actively support mitochondrial performance. Enhanced ATP production, stimulation of mitochondrial biogenesis (via AMPK/PGC-1 α), membrane potential stabilization, and protection against apoptosis are all part of the mechanism that contributes to a measurable reduction in fatigue and burnout.

Therefore, ARONVIT® should be regarded not merely as a health-supporting supplement but as a cornerstone of a modern longevity strategy. Through the combined anti-inflammatory and antioxidant effects of aronia polyphenols, the body is supported in maintaining physiological balance, regenerating more effectively, and slowing the biological aging process. With its holistic influence on cardiovascular, neurological, immune, and metabolic systems, ARONVIT® emerges as a valuable asset in the next generation of preventive health solutions.



ARONVIT[®]
by Greenvit[™]

The Visible Effect of Aronia Berry Consumption



Wellness Boost

The direct reduction of oxidative stress combined with immune system support—both outcomes of aronia extract intake—contributes meaningfully to slowing down aging processes, enhancing overall well-being, and offering protection against disease. By reinforcing the body's natural defense mechanisms and improving cellular resilience, aronia helps maintain a sense of balance and vitality in everyday life.



Balance and Vitality

Chronic inflammation is one of the key drivers behind immunosenescence—the aging of the immune system—which reduces the body's ability to fight infections and increases vulnerability to disease. In parallel, this low-grade inflammation disrupts cellular energy homeostasis, leading to fatigue and decreased vitality due to impaired mitochondrial function and reduced ATP production. Bioactive compounds found in aronia extracts support the restoration of systemic balance and vitality by improving cardiometabolic parameters, enhancing energy production, and supporting cognitive function. With more stable energy levels and improved metabolic efficiency, the body becomes more resilient to everyday challenges.



Glow from Within

Pro-inflammatory cytokines like IL-1 β stimulate the activity of matrix metalloproteinases (MMPs), which degrade collagen and accelerate the formation of wrinkles and the loss of skin elasticity. Aronia, rich in anthocyanins and polyphenols, helps reduce inflammation and shields the skin from oxidative damage caused by free radicals, including UV radiation, air pollution, and cigarette smoke. These protective effects translate into visibly improved skin condition—reducing redness, soothing inflammation, and supporting a clearer, more radiant complexion.



Radiating Health and Energy

The combined antioxidant and anti-inflammatory properties of aronia support systemic health and promote a lasting sense of vitality. By protecting the body against oxidative damage, aronia helps to ease the physiological burden associated with disease processes, enabling more efficient function across critical systems such as the cardiovascular and nervous systems. This results in noticeable physical benefits—such as reduced fatigue and improved breathing—as well as mental clarity and reduced anxiety linked to chronic health issues. Supporting the balance of organ health, immune strength, cognition, and digestion leads to a state that can be best described as “radiating health and energy,” where the body feels energized, resilient, and visibly revitalized.



ARONVIT[®]
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The impact of aronia berry on skin structure in women with cellulite

A randomized clinical study conducted in Serbia evaluated the effects of daily consumption of aronia juice (*Aronia melanocarpa*) on the structure of the skin and subcutaneous tissue in women with grade 2 cellulite (according to the Nürnberger–Müller scale). The study included 29 women aged 25 to 48, who consumed 100 ml of organic aronia juice daily for 90 days.

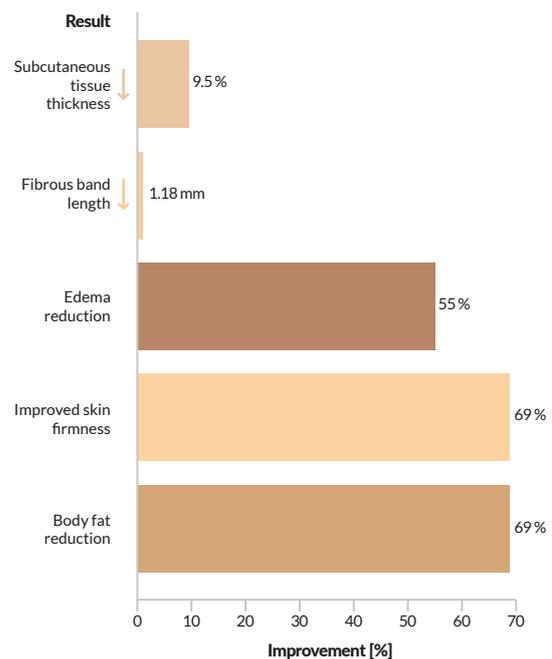
Skin morphology assessments were carried out using high-frequency ultrasonography. Parameters measured included: subcutaneous tissue thickness (ScTT), dermis and epidermis thickness (DET), the length of subcutaneous fibrous bands (ScTFL), and the presence of edema. Additionally, anthropometric and biochemical parameters were monitored throughout the study.

Key results included:

- Average reduction in subcutaneous tissue thickness (ScTT): 1.9 mm (–9.5%).
- Shortening of subcutaneous fibrous bands (ScTFL): by 1.18 mm on average; observed in 97% of participants
- Edema reduction: from 55% to 0% after 90 days of supplementation.
- Improved skin firmness (subjective assessment): reported by 69% of participants.
- Weight loss: observed in 16 individuals; body fat reduction: in 20 participants (69%).

The biological mechanisms underlying these effects include enhanced microcirculation, reduced oxidative stress and inflammation, and modulation of adipocytokine gene expression and vascular enzyme activity. These findings suggest that supplementation with aronia juice may naturally support the remodeling of subcutaneous tissue and improve the visual appearance of skin affected by cellulite.

Figure 5. Key Results After 90 Days of Aronia Supplementation



Aronia acts at the root of the problem—at the level of microcirculation and adipose tissue. It promotes better blood flow, supports tissue regeneration, and reduces inflammatory processes that contribute to cellulite formation.

The result? Smoother, firmer, and more elastic skin—achieved naturally and safely. **ARONVIT**[®] may serve as an effective ally in daily anti-cellulite care—not working from the outside in, but from the inside out.

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